

## CLAIMS

1. An human antibody, or its functional fragments, against the HCV E2 protein characterized in having an *in vivo* neutralizing activity.
2. Antibody according to claim 1, being the antibody e137 characterized by
- 5 having the following sequences of variable parts of the heavy chain and the light chain:

e 137 Heavy chain (HC)

LLEQSGSEVKVPGSSSLKV SCKTSGGTFSTYTF SWVRQAPGQGLEWMG  
GITPIIGIAN YARNFQDRVTITADESTSTVYMEVRR LRSEDTAVYYCAKTS  
10 EVTATRGRTFFYSAMDVWGQGT

e 137 Light chain (LC)

MAELTQSPSFLSASVGDRVTITCRASQGISNYLAWYQQKPGKAPKLLIYA  
ASTLQSGVPSRFSGSGSWTEFTLTISR LQPEDFATYYCQHLNTYPWTFG  
QGT

- 15 3. Antibody according to claim 1 being the antibody e301 characterized by having the following sequences of variable parts of the heavy chain and the light chain:

e 301 Heavy chain (HC)

LLEQSGSEVKKPGSSVRV SCTTSGGTLSDYGFNWLRQAPGQGPEWMG  
20 GIIP LFRRTTYGQKFQGR LTITADESTGATYME LSSLRSDDTAVYYCARE  
KVS VLTGGKSLHYFEYWGKGT

e 301 Light chain (LC)

MAELTQSPATLSVSPGERATL SCRASQSVSSRLAWYQQKRGQAPSL LIY  
DTSSRATGV PARFSASGSGTQFTLTIS SLQSEDFALYYCQQYNDWPSTF  
25 GQGT

4. Composition for anti-HCV therapy comprising in a therapeutically effective amount at least one of the antibodies according to the preceding claims.
5. Composition according to claim 4 for topical use in gel, creme, ointment
- 30 and ovule formulations.
6. Use of the antibody according to claims 1-3 for validating anti-HCV vaccines.

7. Nucleic acid coding for antibody according to one of claims from 1 to 3.
8. Recombinant expression vector comprising nucleic acid according to claim 7, able to effectively express the antibody of claims 1 to 3 in prokaryote or in eukaryote cells.
- 5 9. Recombinant vector according to claim 8 further comprising a nucleotide sequence coding for a signal peptide, substantially contiguous with the sequence coding for the antibody of claims from 1 to 3, able to export this antibody out of the cell environment.
- 10 10. Use of the recombinant vector according to claim 9 in gene therapy.
11. Method for the determination of the presence of antibodies directed against different epitopes of the HCV E2 protein in a biological fluid comprising the steps of:
  - a) determining the presence of antibodies in said fluid able to inhibit the binding of specific human Fab directed against different epitopes of protein E2;
  - 15 b) correlating the presence of so titered antibodies with clinical characteristics of patients, such as prognosis, responsiveness to therapy, infectivity.